EXTRA PRACTICE — Exercises

Unit IV – First Degree Relations with Three or More Placeholders
Part B – Special Cases
Lesson 2 – Infinite Number of Solutions - Dependent

Solve each of the following systems and classify them as dependent or independent.

1. $x + y - z = 2$
   $6x + y + z = 4$
   $4x - y + 3z = 0$

2. $2x + y - z = 3$
   $4x - y + 4z = 0$
   $^{-}3y + 2z = 6$

3. $2x - 3y + z = ^{-}8$
   $10x + y - z = 4$
   $4x + 2y - z = 6$

4. $x + z = 2$
   $y + z = 0$
   $x + y = 2$

5. $2x - 2y + 3z = ^{-}5$
   $x + 2y - z = 1$
   $^{-}5x + 2y - 5z = 9$

EXTRA PRACTICE — Answer Key

Unit IV – First Degree Relations with Three or More Placeholders
Part B – Special Cases
Lesson 2 – Infinite Number of Solutions - Dependent

Solve each of the following systems and classify them as dependent or independent.

1. True Statement
   Dependent System
   $$S = \left\{(x,y,z) \middle| \begin{array}{l} x + y - z = 2 \\ 6x + y + z = 4 \\ 4x - y + 3z = 0 \end{array}\right\}$$

2. Independent System
   $S = \{(2, -4, -3)\}$

3. True Statement
   Dependent System
   $$S = \left\{(x,y,z) \middle| \begin{array}{l} 2x - 3y + z = -8 \\ 10x + y - z = 4 \\ 4x + 2y - z = 6 \end{array}\right\}$$

4. Independent System
   $S = \{(2, 0, 0)\}$

5. True Statement
   Dependent System
   $$S = \left\{(x,y,z) \middle| \begin{array}{l} 2x - 2y + 3z = -5 \\ x + 2y - z = 1 \\ -5x + 2y - 5z = 9 \end{array}\right\}$$